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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/347,523	07/06/1999	YOSHIYUKI GOMI	103229	3978

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EXAMINER	
NGUYEN, DUNG T	
ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 12/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	09/347,523	GOMI, YOSHIYUKI	
	Examiner	Art Unit	
	Dung Nguyen	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *17 September 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7,8,10 and 11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7,8,10 and 11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1. The present Office action is made in response to the amendment filed on 9/17/2003.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The specification fails to provide a proper antecedent basis for the feature relating to the height of the adhesive over the step portion as recited in the newly-added material to each of claims 1, 4, 7 and 10.

Applicant should note that the feature that the adhesive over the step portion has a height that is less than the height of the microlenses recited in the newly-added material to the claims has a support in the drawings as can be seen in the figure 6; however, such a feature does not have a support in the specification.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1-5, 7-8 and 10-11 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (APA), figure 11, in view of Ray et al, US Patent No. 5,701,008, of record.

Regarding claims 1-3 and 10-11, APA discloses an electro-optical device (figure 11) comprising:

. a pair of substrates (30, 31);

. an electro-optical material (39);

. a plurality of pixels (46);

. a lens array (L) with a plurality of convex microlenses as claimed;

. a step portion (LB);

. a transparent cover (49) adhered to the lens;

. a photo curing resin sealing material would be inherently forming for adhering two substrates together (see APA's specification, page 3, lines 4-5.

The difference between the claims and the APA is that the step portion being substantially equal in height to the microlenses. However, Ray et al do disclose that a step portion can be formed with the height of microlenses as well as the width of the step portion being wider than the entire width of the sealing material (8) (e.g., upper portion of the sealing material) as shown in figure 4. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify APA's electro-optical device having a step portion which is substantially equal in height to the microlenses in order to improve the detection efficiency of detector element (i.e., pixels) (see col. 2, ln. 21).

Regarding to the feature that the adhesive over the step portion is a thin layer whose height is less than the height of the microlenses as newly-added to the claims, such a feature is readable from the structure of the combined product provided by the APA and Ray et al. The support for that conclusion follows: The substrate having the microlenses and the step portion provided by the APA

modified by the teaching provided by Ray et al, i.e., a step portion over the sealing material has a thickness equal in height of the microlenses, will be bonded/adhered to the transparent cover (49) via the adhesive (48). The adhesive filling into the space/gap defined between the surface of the transparent cover (49) and the surface of the substrate having microlenses and the step portion will follow the pattern defined by the two mentioned surfaces and thus the adhesive layer on the gap defined by the step portion and the transparent cover over the sealing material has a height that is less than the height of the microlenses as a result of the protrusion formed on the step portion of the combined product.

In addition, in case of no photo curing resin using for sealant, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to form a photo curing resin based material because it is notoriously well known in the art using such photo curing resin for the purpose of sealing, and it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice.

Regarding claims 4-5, and 7-8, since the method of manufacturing the device is merely a list of forming each component and each component must be formed to make the device, the method of manufacturing would be inherent to the device.

Response to Arguments

5. Applicant's arguments filed on 9/17/2003 have been fully considered but they are not persuasive for the following reasons.

First, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Second, In response to applicant's argument relating to the structure of the device provided by Ray et al is different from the device of the invention, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Applicant is respectfully invited to review the rejection as set forth in the previous office action and stated in the present action in which the art of Ray et al is used by the examiner to show to one ordinary skill in the art about a substrate having a microlenses pattern and step portion formed around the microlenses pattern wherein the step portion has a height equal in the height of the microlenses.

Third, in response to applicant's arguments that the combined art does not disclose the feature that adhesive over the step portion is a thin layer whose height is less than the height of the microlenses, the Examiner respectfully disagrees with the applicant's viewpoint. The examiner's opinion is as follow: The substrate having the microlenses and the step portion provided by the APA modified by the teaching provided by Ray et al, i.e., a step portion over the sealing material has a thickness equal in height of the microlenses, will be bonded/adhered to the transparent cover (49) via the adhesive (48). The adhesive filling into the space/gap defined between the surface of the transparent cover (49) and the surface of the substrate having microlenses and the step portion will follow the pattern defined by the two mentioned surfaces and thus the adhesive layer on the gap defined by the step portion and the transparent cover over the sealing material has a height that is less than the height of the microlenses as a result of the protrusion formed on the step portion of the combined product.

Fourth, with regard to applicant's argument that the width of the step portion provided by Ray et al does not wider than the entire width of the sealing material as claimed, the Examiner respectfully disagrees with the applicant's viewpoint for the following reasons.

a) It is noted that while the claim refers to the entire width of the sealing material; however, the claim fails to provide any specific or detailed features for the so-

called "entire width" of the sealing material. The present specification and claims do not provide any definite for the so-called "entire width" of the sealing material.

b) Applicant has stated that the width of the step portion provided by Ray et al does not wider than the entire width of the sealing material. However, applicant has failed to provide a positive support for his conclusion. The examiner has carefully review the specification of the Ray et al Patent and cannot find any phrase or sentence which states that the width of the step portion is less than or equal to the width of the sealing material. Applicant has based on the drawing, i.e., figure 4 of the Ray et al patent to support for this argument; however, applicant is respectfully invited to review the figure 1 of the Ray et al patent which shows that the width of the step portion is much larger than the width of the sealing material. See the structural relationship between the step portion and the sealing material shown on left side of the figure.

c) The specification indirectly provides that the width of the step portion is larger than the width of the sealing material because the Ray et al specification disclose that the area adjacent to the step portion is used for forming the getter gratings. As a result, if the width of the sealing material larger than the width of the step portion than the sealing material will prevent the operation of the getter gratings.

Fifth, in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to

do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, both art of the APA and Ray et al are directed to the use of a substrate having microlenses patterns and a step portion wherein the substrate is adhered/bonded to a second substrate supporting a plural detecting elements. While the APA does not disclose that the height of the step portion is equal in the height of the microlenses; however, Ray et al disclose that the step portion has a height equal in the height of the microlenses in order to improve the detection efficiency of detector element (i.e., pixels) (see col. 2, ln. 21).

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung T. Nguyen whose telephone number is (703) 305-0423. The examiner can normally be reached on M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim H. Robert can be reached on (703) 305-3492. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0956.

Dung T. Nguyen
Examiner
Art Unit 2871

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